

Claims

What is claimed is:

5 1. A method of attenuating a beam of light having a circular cross-section comprising the step of disposing a member having a beam attenuating portion within the beam of light, the intersection of the beam attenuating portion of the member and the beam of light defining a region having two substantially equal sides defining an angle therebetween of other than 0 degrees and 180 degrees, the two sides having a central line of symmetry coincident with a line of symmetry through the centre of the circle, the angle moving along the line of symmetry.

10 2. A method of attenuating a beam of light having a circular cross-section as defined in claim 1, wherein a portion of the outer circumference of the beam intersects the member, the portion being less than 360 degrees.

15 3. An optical attenuator for attenuating a beam of light having a circular cross-section, the optical attenuator comprising:
a beam attenuator for attenuating a portion of the beam of light when a portion of the beam attenuator is disposed within the beam of light, the beam attenuator being disposed within the beam of light such that the intersection of the beam attenuator and the beam of light defines a region having two substantially equal sides having an angle other than 0 degrees and 180 degrees therebetween, the two sides having a central line of symmetry coincident with a line of symmetry through the centre of the circle, the angle moving along the line of symmetry; and,
a controller for moving the beam attenuator in order to vary a size of the portion of the beam attenuator within the beam of light.

20 25 4. An optical attenuator for attenuating a beam of light having a circular cross-section as defined in claim 3, wherein the beam attenuator comprises a cylindrical shaft having a cone at a first end thereof.

5. An optical attenuator for attenuating a beam of light having a circular cross-section as defined in claim 4, wherein the beam attenuator includes a thread at a second end thereof and the controller mates with the threading for causing the beam attenuator to advance or retract in a substantially linear direction.

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6. An optical attenuator for attenuating a beam of light having a circular cross-section as defined in claim 3, wherein the beam attenuator comprises a portion of a member, the portion for substantially attenuating light.

10 7. An optical attenuator for attenuating a beam of light having a circular cross-section as defined in claim 6, wherein the beam attenuator comprises an opaque cone disposed within a transparent substrate.

15 8. An optical attenuator for attenuating a beam of light having a circular cross-section as defined in claim 3, wherein the two substantially equal sides define an angle of 90 degrees.

20 9. An optical attenuator for attenuating a beam of light having a circular cross-section as defined in claim 3, wherein the beam attenuator for attenuating a portion of the beam of light comprises a wedge shaped edge.

10. An optical attenuator for attenuating a beam of light having a circular cross-section as defined in claim 3, wherein the beam attenuator for attenuating a portion of the beam of light comprises a wedge shaped body of light absorbing material.

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11. An optical attenuator for attenuating a beam of light having a circular cross-section as defined in claim 3, wherein the beam attenuator for attenuating a portion of the beam of light comprises an edge having a wedge shaped opening.

12. An optical attenuator for attenuating a beam of light having a circular cross-section as defined in claim 3, wherein the beam attenuator for attenuating a portion of the beam of light comprises a body of light absorbing material having a wedge shaped opening.

5 13. An optical attenuator for attenuating a beam of light having a circular cross-section as defined in claim 3, wherein the beam attenuator for attenuating a portion of the beam of light comprises two sheets of opaque material defining an angle therebetween, the two sheets being moved in opposing directions such that the angle moves along the line of symmetry.

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14. An optical attenuator for attenuating a beam of light having a circular cross-section as defined in claim 3, wherein the beam attenuator for attenuating a portion of the beam of light further comprises a layer of light absorbing material.

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15. An optical attenuator for attenuating a beam of light having a circular cross-section as defined in claim 3, further comprising an input lens.

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16. An optical attenuator for attenuating a beam of light having a circular cross-section as defined in claim 3, further comprising an output lens.

17. An optical attenuator for attenuating a beam of light having a circular cross-section as defined in claim 16, wherein the output lens comprises a GRIN lens.

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18. An optical attenuator for attenuating a beam of light having a circular cross-section as defined in claim 3, comprising a reflective surface for reflecting the beam of light incident thereon back along the optical path in an opposite direction.

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19. An optical attenuator for attenuating a beam of light having a circular cross-section as defined in claim 18, wherein the reflective surface comprises a mirror.

20. An optical attenuator for attenuating a beam of light having a circular cross-section as defined in claim 3, comprising a detector.

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